AP Chemistry Daily Videos 9.2 Absolute Entropy and Entropy Change

<u>Video #1</u>

- 1. What are the units for entropy values?
- 2. What is the equation used to calculate the entropy change of a process?
- 3. Pause the video @ 3:00 and try the problem on your own. Then evaluate your work and identify any errors you may have made.

$$2Na(s) + Cl_2(g) \rightarrow 2NaCl(s)$$
 $\Delta H = -410 \frac{kJ}{mol_{rxn}}$

Answer the following questions about the reaction above at 298 K.

| | Absolute Entropy at 298 K (<u>J</u> _{K·mol}) |
|-----------|---|
| Na(s) | 51.1 |
| $Cl_2(g)$ | 223.1 |
| NaCl(s) | 72.1 |

- (a) Predict the sign of ΔS° for this reaction. Justify your answer.
- (b) Using the information in the table to the left, calculate the value of ΔS° for the reaction.

4. What are the takeaways?